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SYSTEM AND METHOD FOR IN-LINE STRESS MEASUREMENT BY CONTINUOUS BARKHAUSEN METHOD

Abstract

A method and system for performing in-line measurement of stresses in pipeline walls by continuous Barkhausen method comprises an inspection pig including permanent or DC electromagnets for generating a magnetic field that moves with the inspection pig through a pipeline, inductive or other types of magnetic field sensors for reading Barkhausen noise signals generated by the moving magnetic field, and associated instrumentation for amplifying, filtering, detecting and storing the Barkhausen noise signals. The size of the sensors may be selected to match the size of defects being investigated. By comparing trending data over time to determine changes in Barkhausen noise levels, greater detection sensitivity may be achieved. The method may be particularly advantageous for use in inspection pigs that also use magnetic flux leakage to determine pipeline defects, since the magnetic flux leakage method also use permanent or DC electromagnets.